

NASA Glenn
Plum Brook Station

Protecting the Public & the Environment During Decommissioning

This is one in a series of fact sheets prepared by NASA Glenn Research Center to provide the public with information on decommissioning the closed Reactor Facility at Plum Brook Station.

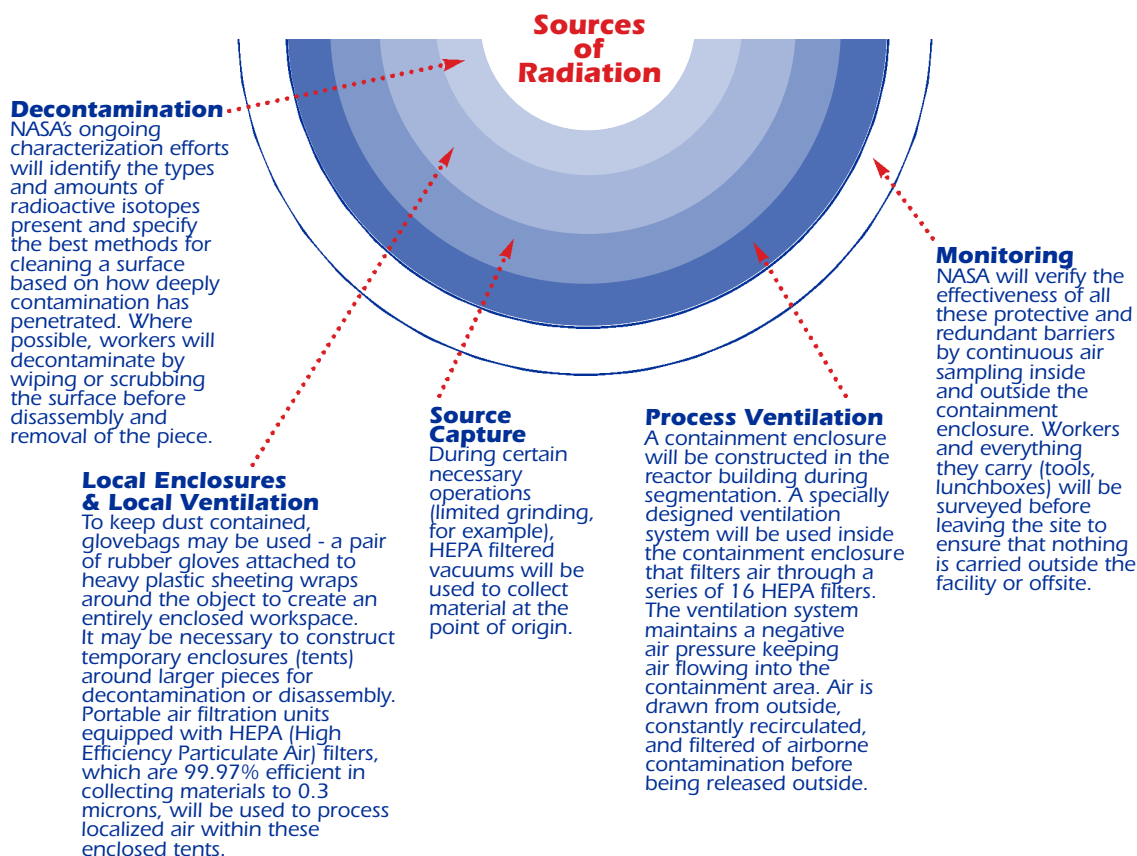
NASA views safety through many different lenses - in design, planning and implementing - and is constantly focused on protecting the public, the workers and the environment. Throughout decommissioning, NASA clearly sees safety as its number one priority.

Contained Onsite

Among the many safeguards NASA has put in place to protect the public and the environment is the use of engineering controls to prevent or minimize the release of any contamination to the air, land, surface or ground water. NASA is taking several steps to reduce radiation at its source - by decontaminating items in place before removal or by using low dust-generating techniques to dismantle and remove contaminated materials. In addition, multiple barriers, often called redundant controls, overlap to keep dust contained onsite. Constant monitoring verifies that the safeguards are effective in protecting the public and the environment.

Since 60% of the remaining radioactivity is found in the reactor internals and reactor vessel, NASA is removing them first. These activities have the greatest potential for release of contamination and therefore, will have the most barriers in place to protect the workers, the public and the environment. Reducing the radiation source from the start decreases the possibility for exposure during the remainder of decommissioning.

Multiple Barriers Overlap to Keep Dust Contained Onsite



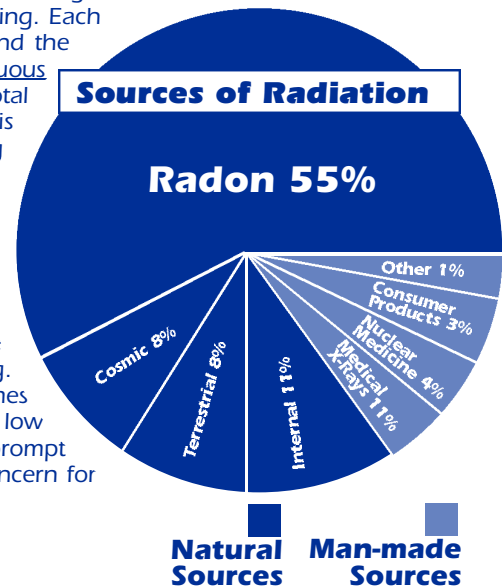
Effectiveness Is Verified Through Monitoring

NASA has been conducting environmental monitoring ever since the Reactor Facility was in use and during the nearly 30 years since it closed. Prior to the start of decommissioning, air, water and sediment monitoring was increased to provide a comprehensive environmental baseline. Regularly collected samples will be compared against this baseline to ensure NASA's engineering and administrative controls are effective in containing radiation onsite during decommissioning and ensuring the continued protection of the public and the environment.

NASA Toughens Already Stringent Air & Water Limits

The Nuclear Regulatory Commission (NRC) places limits on possible releases of isotopes (of which there are several hundred types) that might be released to air and water during decommissioning. Each limit is set to be protective of human health and the environment so that a person with continuous exposure to that level for a year will have a total exposure of not more than 50 millirem. This health protective limit was established taking into account that the average American is exposed to radiation all the time and receives about 360 millirems of radiation per year, most of it from naturally occurring sources.

From the types of isotopes that are present at the Reactor Facility site, NASA chose those with the lowest, or most stringent, NRC limits as the health protective limits for decommissioning. NASA set its air and water monitors to be ten times more sensitive in detecting levels - very, very low releases. That means that NASA can take prompt action, if necessary, well before there is any concern for public health or the environment.



Multi-Media Sampling

AIR

Six air monitoring stations run continuously and are designed to emit a signal if the amount of radiation present were to exceed NASA's specified health protective limit. Each air monitor is equipped with particulate filters that are collected weekly for onsite analysis of gross alpha and beta activity. Four air monitors are located at the fence - north, south, east and west - about 500 feet from the Reactor Facility. Two other air monitors sit roughly a mile "upwind" (southwest) and "downwind" (east-northeast) from the building.

WATER

Five surface water samples are taken from nearby streams and ground water samples are taken from two onsite deep wells each month. Water samples are sent to a certified laboratory and analyzed for gross alpha and beta activity.

SEDIMENT

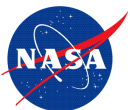
To monitor sediment during decommissioning, NASA takes 5 samples per month at points upstream and downstream of the Reactor Facility and compares them to background levels determined by the environmental baseline as well as to NRC cleanup levels that NASA must meet for license termination. The sediment cleanup level was calculated using site-specific characteristics such as soil type, ground water flow, isotopes present and form of material left behind. A certified laboratory analyzes the samples for gross alpha, beta and gamma activity.

Commitment to Safety

NASA has been dedicated to protecting the health and safety of its neighbors for more than 45 years and will continue to do so throughout decommissioning. To date, results of air, water and sediment samples have been similar to normal background radiation levels and do not pose public health concerns.

For more information

on Decommissioning the Reactor Facility at Plum Brook Station, Contact **Sally Harrington** at **216-433-2037** or Email **s.harrington@grc.nasa.gov**. or visit us at our Website at **www.grc.nasa.gov/www/pbrf** or call our toll-free number at **1-800-260-3838** for regularly updated progress reports.



**NASA Glenn
Plum Brook Station**

**NASA Glenn
Research Center**
Community and Media
Relations Office
21000 Brookpark Road
Mail Stop 3-11
Cleveland, Ohio 44135